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ABSTRACT

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George Forman

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Instant Video Revisiting: The Video Camera as a "Tool of the Mind" for Young Children

George Forman

Abstract

Once used only to record special events in the classroom, video cameras are now small enough and affordable enough to be used to document everyday events. Video cameras with foldout screens allow children to watch their activities immediately after they happen and to discuss them with a teacher. This article coins the term instant video revisiting (IVR) to describe this process and, using classroom video clips, explores the educational value of IVR.

A Modern Tool of the Mind

Educators have been quick to use the educational benefits of new technology—from the pencil to chalk, overhead projectors, audio recorders, and now video players and cameras. Yet the video camera has been underutilized in everyday classroom instruction and has been reserved for documenting only special events or field trips. The video camera could be treated as a memory machine that would yield a fairly replete and honest record of everyday events. Used in this way, the video camera could become a modern "tool of the mind," a staple in the classroom. Perhaps the cameras have been too expensive and too large in the past, but both of these factors have changed in the past few years. So it is timely to present, in this article, a set of research questions about the educational value of a special type of video camera—the 8mm video camera with a foldout screen that allows children to watch their activities immediately after they happen. This immediate revisiting differs from revisiting a videotape some hours or days later in a context that is different from the original experience; therefore, this article coins the phrase "instant video revisiting" or IVR. In IVR, the revisiting is done in the same place and context that is displayed in the episode on the tape.

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What Is the Video Image?

In the following short video clip of Rubin, he is playing with a toy fish in the water table. The clip begins with my showing him an instant replay of the tape on the tiny screen. He sees himself and refers to himself by his own name. Notice two things. First, Rubin refers to his own image as "It's Rubin" using a third-person point of reference. Second, notice that Rubin tells the *story* of the big whale eating the fish. He does not simply tell me what he is physically doing, such as "Rubin make the fish splash."

Download the free Quicktime Player.
View a Quick Time Movie of Rubin.
Read the transcript.
See both.

Clearly, Rubin was interested in this image of himself. This tiny screen presents a compelling stimulus. But what is this image to a young child? Why do so many young children refer to their image in the third person or in other ways that suggest the image is "sort of me" but "sort of something else?" The following two clips of Peter and Autumn broaden this question.

Peter speaks no English, but the video camera definitely engages his mind. Watch him scratch his face when he sees a video replay of himself scratching his face a few minutes earlier. He repeats this behavior on four consecutive viewings. What provokes this child to scratch his own face when he sees himself scratching his face in the video? Does he seek to confirm that this image is truly himself?

View a Quick Time Movie of Peter.

In what time frame does the video live for the young child—the present or the past? Listen to Autumn react to how "funny" it is to see her own hand on the screen, yet have her real hands on her knees. I first videotape her hand live on the camera and ask her to wiggle her fingers so that she can "feel" the contemporaneity between the moving image and her moving hand. Then I rewind (not shown) and let her watch her moving hand when her real hands are resting on her knees. She clearly is engaged by this asynchrony, which suggests that at 3 years she understands that this image is both her and not her.

View a Quick Time Movie of Autumn.
Read the transcript.
See both.

A Shift toward Meaning and Intention of Action

Now let's return to Rubin—who tells me about the whale. Is this frame of mind toward the experience unusual and less likely to happen without IVR?

View a Quick Time Movie of Rubin.
Read the transcript.
See both.

Rubin looks at the action in the video and tells me what it means, not just what it is. He does not say, "I

am playing with the fish" or "I made a big splash." He is telling me about the purpose and intention of the actors in his story. I propose that he would not have made this shift from the physical actions to motivated intentions without instant video replay. The video camera, as a "tool of the mind" allows Rubin to "download" the details of actions to the videotape. The video replays the physical detail. His mind is now free to think about what the actions mean.

A Tool of the Mind for the Teacher

This "tool of the mind" also affects how a teacher observes the children. When I was walking through the classroom, I made decisions about what to film. I did not realize explicitly why some episodes were better candidates than others, but now I think I know. I was looking for instances where children were doing something I could ask them about, some little bit of cleverness that they had performed of which they might not be aware. I wanted to use the camera to bring into their consciousness the children's own high-level thinking in ordinary moments. The following clips provide a few examples.

In the next clip, I find a reason to ask Derrick why he is being so careful in the way he moved his truck. He was playing with a toy truck made of Lego-like elements. The toy would come apart if it fell from the platform on which Derrick was playing. Derrick wanted to move the truck to the floor where he had more space, but he did not want to step outside the "pretend frame" by just lifting the truck through the air. So he drives the truck over the cliff very carefully. I figure he was thinking about something, so I capture his play on videotape and then revisit the tape with him a few minutes later. Note how he gives his reason for the behavior, as opposed to simply describing his behavior: "Because I didn't want to break it."

View a Quick Time Movie of Derrick.
Read the transcript.
See both.

It is interesting that I found an opportunity to use IVR with Autumn, age 3, to ask the same question when she was being very careful in placing some small toy horses so they would not fall over. She was placing them quite near each other and had to slow her actions so her hand would not bump a previously placed toy horse. I ask her, "I noticed you were placing those horses very carefully. Why were you being so careful?" She draws a breath and says, "Because I was being so careful." Undiscouraged by her circular answer, I rephrase my question. "Yes, I know you were being very careful, but what were you trying to do." She gives a second draw of breath and says with confidence, "I was trying to be very careful." Through the use of IVR, I was able to learn that this "why" question was a bit beyond Autumn's understanding. And since I had presented her with the video replay of just where and when she was being very careful, as a researcher I had more confidence that she knew what I was talking about. Her problem was not in retrieving from memory the correct referent (a semantic issue), but rather her problem was in her inability to muster a reframing of that referent into its intentionality or purpose (a pragmatic issue).

Let's continue with this idea that the video camera has an affordance (e.g., capturing memories) that once adopted by the teacher creates an attitude of mind about what to observe in the classroom and what is worthy of revisiting. My camera finds Joanna solving a problem with paper that has no support under it—a little moment, but a clever one.

View a Quick Time Movie of Joanna.

Read the transcript.
See both.

In like measure, I was excited when my camera caught Lisa solving a problem by using her mouth as a third hand. She wanted to tape the two ends of a folded piece of paper to make an envelope for her daily message to a friend. There is no sound on this clip. I knew that after this footage was filmed, I would ask her why she was using her mouth.

View a Quick Time Movie of Lisa.

Several minutes after this clip was made, I do ask Lisa why she was using her mouth. She tells me straight off, "I want to tape the ends together and if I did not hold it [in my mouth], it would fall down." At age 4½, she is well on her way toward making her plans and purposes explicit through an articulate use of words.

The video camera, because it affords a more reflective attitude toward an experience, caused me to be alert for those moments in the classroom where children were being purposive.

The children themselves gradually made a shift from telling me about their product to telling me about their process. Lisa began to say, "I am putting the tape here so the paper will not open." Without the video review, she might more likely say, "I am making an envelope."

Although the focus on process with the videotape may sound obvious and ordinary, the point is that children seldom talk this way about their experience. For many reasons, including Piaget's theory of equilibration and his emphasis on procedural knowledge and transformations between states, this type of talk should be supported.

What Is Interesting

Children would see me approach with my camera. Their knowledge that I was recording gave the children a reason to consider what in the classroom or what in their own play was interesting. It turns out that thinking about what is interesting requires rather high-level thinking.

The next clip begins with my revisiting a videotape with Derrick who had been playing in a rather random and distracted way with his fire truck. I knew from earlier observations of Derrick that he had great fantasy in his play and great curiosity about how things work. But for some reason, at the time I was videotaping him, he was waiting for an idea. So I say to Derrick, "Could you show me something interesting." He does not know this word, so I continue, "Could you show me something special or different about your truck." He looks at the camera and shows me how the ladder on his truck uncoils. He had made this ladder himself from the connectable modular pieces in a construction set.

View a Quick Time Movie of Derrick.
Read the transcript.
See both.

In the next clip, we see Charlie pointing to a fishnet. He points voluntarily without my asking him to show me anything. Charlie is rather media savvy and wants me to get something special on my videotape. He remembers that recently, when making their loft into a pretend boat, this fishnet was hung

by the children and teachers as an enhancement of the nautical theme the children had chosen. Charlie equates interesting with what's new. He thinks something is interesting because it was not there before, therefore it is "news." And as you hear in my revisiting with Charlie, he wanted me to get a picture of this fishnet so we all could see it "on the big screen." His mind anticipates the viewing as he guides me through the classroom.

View a Quick Time Movie of Charlie.
Read the transcript.
See both.

The camera, because it records an experience, gives the child a reason to scan the aspects of an experience for highlights, for news. This process of reflecting on the aspects of an experience, in search of "the news," is a nontrivial, challenging, and useful endeavor. Finding the news is selective, meta-cognitive, and collaborative in focus.

The Video as Evidence

On several occasions, it seemed that children were relying too heavily on the video image. For example, there was one case where a group of boys got into a slight tussle for possession of a wooden spoon. The videotape displayed this tussle of the three boys as well as the sound of a child crying. The crying came from off camera, not from any of the three boys. In the video clip, Charlie wipes his eyes as he leaves the loft, but Charlie never cried during the tussle over the spoon.

During the revisiting of this tape, the boys each thought the crying was one of the other two boys. One boy, Charlie, even said that he had tears, just a little, but he was crying for his friends. This little episode alerted me to the possibility that the videotape, once understood as a record of a past experience, takes on a dominance that is not warranted. Occasionally, children will reinterpret their own memory when confronted with ambiguous information from a videotape.

View a Quick Time Movie of the tussle.
Read the transcript.
See both.

Taking Another Child's Perspective

This final clip portrays Nickolas, age 4, taking a sifting pan from Hayden, age 4½. After Hayden chases Nickolas around the room, a teacher intervenes and negotiates the return of the pan to Hayden. Immediately thereupon, I ask both children to watch this episode with me on the video camera. I have watched this clip many times, and now I ask you to watch it to see if Nickolas has any sense of morality about the inconvenience and frustration he was causing Hayden. It seems to me that Nickolas was eager to see the video (notice him laugh at his image and proudly tell me "My name is Nickolas"). He had, in his own mind, been neutral toward the encounter with Hayden, as if he had been playing a game in which Hayden was a willing and joyful participant. The obvious question arises, to wit, can IVR help children reframe their behavior from the perspective of the other child, a type of meta-perspective if you will, thinking about someone else's thinking? I've called the clip "The Case of the Stolen Pan."

View a Quick Time Movie of "The Case of the Stolen Pan."
Read the transcript.
See both.

The freeze frame at the end, with Nickolas bowing his head, might indicate his feelings of contrition. The pose did not last as long as the freeze frame, so one is not sure. The pose does cause one to reflect and ask if the revisiting had shamed Nickolas, which was not my intention when I asked them to look at the episode. I had hoped to make the revisiting a problem-solving session about what could be done differently. But, understandably so, Hayden was eager to return to the sandbox with her newly reclaimed pan and continue to search for jewels. In this case, the immediacy of the revisiting worked against its effectiveness.

Conclusion

In summary, the following questions can serve to guide future work with IVR:

1. Does IVR increase reflective thinking, helping children to step outside of an experience?
2. Does IVR increase thinking about the process and goals of actions, rather than thinking only about the physical details of an action?
3. Does IVR increase the meta-cognitive by making it possible to query a child about his or her own thinking while engaged in an activity of play or work?
4. Does IVR work in these ways because the replayed videotape, in essence, "downloads" the physical details of an experience and allows the child more "operating memory" space to think about purpose, goals, intentions, and strategies that give the action meaning?
5. Does IVR serve as a "tool of the mind" where the diminutive screen causes children to focus more carefully on the details of their play or to focus more carefully on the global form of their play?
6. Is an essential part of IVR the fact that the revisiting is done "in situ" where, as children revisit, they can touch and refer to the same places and objects that are presented in the video?
7. How best can we adapt IVR to have it serve our objectives of helping children form strong social relations with each other as they discuss their ideas in small groups?
8. What are the developmental milestones that we should know as we use IVR with children of different ages?
9. How does use of the 8mm camera frame the classroom experience for the teacher and frame the teacher's view of his or her role as researcher?
10. What are the inherent efficiencies in having IVR video footage for use in the documentation of the children's learning for study by parents and professionals?

I invite readers to use this technology with care and sensitivity and to find ways to integrate it into small group play and to give more control of the use of this little camera to the children themselves.